

WHAT IS CLAIMED IS

1. A method of treating an organism suffering from a neoplastic disease characterized by the expression of VEGF-D by a tumor, comprising:

screening an organism to determine a presence or an absence of VEGF-D-expressing tumor cells;

selecting said organism determined from the screening to have a tumor expressing VEGF-D; and

administering an effective amount of a VEGF-D antagonist in the vicinity of said tumor to prevent binding of VEGF-D to its corresponding receptor.

2. A method according to claim 1, wherein said organism is a mammal.

3. A method according to claim 1, wherein said VEGF-D antagonist is co-administered with a cytotoxic agent.

4. A method according to claim 1, wherein said antagonist is administered in a composition further comprising at least one pharmaceutical carrier or adjuvant.

5. A method according to claim 1, wherein said neoplastic disease is selected from the group consisting of

malignant melanoma, breast ductal carcinoma, squamous cell carcinoma, prostate cancer and endometrial cancer.

6. A method according to claim 1, wherein said antagonist is a monoclonal antibody which specifically binds VEGF-D and blocks VEGF-D binding to VEGF Receptor-2 or VEGF Receptor-3.

7. A method according to claim 6, wherein said antibody binds to the VEGF homology domain of VEGF-D.

8. A method for screening for a neoplastic disease characterized by an increase in expression of VEGF-D, comprising:

obtaining a sample from an organism suspected of being in a neoplastic disease state characterized by an increase in expression of VEGF-D;

exposing said sample to a composition comprising a compound that specifically binds VEGF-D;

washing said sample; and

screening for said disease by detecting the presence, quantity or distribution of said compound in said tissue sample, where detection of VEGF-D in cells in or around a potential neoplastic growth is indicative of a neoplastic disease.

9. A method according to claim 8, wherein said compound is a monoclonal antibody which specifically binds VEGF-D.

10. A method according to claim 8, wherein said antibody binds to the VEGF homology domain of VEGF-D.

11. A method according to claim 8, wherein a said compound includes a detectable label.

12. A method according to claim 8, wherein said neoplastic disease is selected from the group consisting of malignant melanoma, breast ductal carcinoma, squamous cell carcinoma, prostate cancer and endometrial cancer.

13. A method according to claim 8, wherein said sample is a human tissue sample.

14. A method for screening for a neoplastic disease characterized by an increase in expression of VEGF-D, comprising:

obtaining a sample from an organism suspected of being in a neoplastic disease state characterized by an increase in expression of VEGF-D;

exposing said sample to a composition comprising a compound that specifically binds VEGF-D;

washing said sample; and

screening for said disease by detecting the presence, quantity or distribution of said compound in said sample, where detection of VEGF-D in or on blood vessel endothelial cells in or around a potential neoplastic growth is indicative of a neoplastic disease.

15. A method according to claim 14, wherein said compound is a monoclonal antibody which specifically binds VEGF-D.

16. A method according to claim 15, wherein said antibody binds to the VEGF homology domain of VEGF-D.

17. A method according to claim 14, wherein a said compound includes a detectable label.

18. A method for screening for a neoplastic disease characterized by an increase in blood vessel vascular endothelial cells, comprising:

obtaining a sample from an organism suspected of being in a neoplastic disease state characterized by an increase in blood vessel vascular endothelial cells;

exposing said sample to a composition comprising a compound that specifically binds VEGF-D;

washing said sample; and

screening for disease by detecting the presence, quantity or distribution of said compound in said sample, where detection of VEGF-D in or on blood vessel endothelial cells in or around a potential neoplastic growth is indicative of a neoplastic disease.

19. A method according to claim 18, wherein said compound is a monoclonal antibody which specifically binds VEGF-D.

20. A method according to claim 19, wherein said antibody binds to the VEGF homology domain of VEGF-D.

21. A method according to claim 18, wherein a said compound includes a detectable label.

22. A method according to claim 18, further comprising exposing the sample to a second compound that specifically binds to at least one of VEGFR-2 and VEGFR-3, and wherein the screening step comprises detection of the compound that binds VEGF-D and the second compound bound to blood vessel vascular endothelial cells, to determine the presence, quantity or distribution of blood vessel endothelial cells having both VEGF-D and at least one of VEGFR-2 and VEGFR-3 in or around a potential neoplastic growth.

23. A method for screening for a neoplastic disease characterized by an increase in lymph vessel endothelial cells, comprising:

obtaining a sample from an organism suspected of being in a neoplastic disease state characterized by an increase in lymph vessel endothelial cells;

exposing said sample to a composition comprising a compound that specifically binds VEGF-D;

washing said sample; and

screening for said disease by detecting the presence, quantity or distribution of said compound in said sample, where detection of VEGF-D in or on lymph vessel endothelial cells in or around a potential neoplastic growth is indicative of a neoplastic disease.

24. A method according to claim 23, wherein said compound is a monoclonal antibody which specifically binds VEGF-D.

25. A method according to claim 24, wherein said antibody binds to the VEGF homology domain of VEGF-D.

26. A method according to claim 23, wherein a said compound includes a detectable label.

27. A method according to claim 23, further comprising exposing the sample to a second compound that specifically binds to VEGFR-3, and wherein the screening step comprises detection of the compound that binds VEGF-D and the second compound bound to lymph vessel endothelial cells, to determine the presence, quantity or distribution of lymph vessel endothelial cells having both VEGF-D and VEGFR-3 in or around a potential neoplastic growth.

28. A method for maintaining the vascularization of tissue in an organism, comprising administering to said organism in need of such treatment an effective amount of VEGF-D, or a fragment or analog thereof having the biological activity of VEGF-D.

29. A method of treating an organism suffering from a neoplastic disease characterized by the expression of VEGF-D by a tumor, comprising administering an effective amount of a VEGF-D antagonist in the vicinity of said tumor to prevent binding of VEGF-D to its corresponding receptor.

30. A method according to claim 29, wherein said organism is a mammal.

31. A method according to claim 29, wherein said VEGF-D antagonist is co-administered with a cytotoxic agent.

32. A method according to claim 29, wherein said antagonist is administered in a composition further comprising at least one pharmaceutical carrier or adjuvant.

33. A method according to claim 29, wherein said neoplastic disease is selected from the group consisting of malignant melanoma, breast ductal carcinoma, squamous cell carcinoma, prostate cancer and endometrial cancer.

34. A method according to claim 29, wherein said antagonist is a monoclonal antibody which specifically binds VEGF-D and blocks VEGF-D binding to VEGF Receptor-2 or VEGF Receptor-3.

35. A method according to claim 34, wherein said antibody binds to the VEGF homology domain of VEGF-D.

36. A method of screening a tumor for metastatic risk, said method comprising:

    exposing a tumor sample to a composition comprising a compound that specifically binds VEGF-D;

    washing said sample; and

    screening for metastatic risk by detecting the presence, quantity or distribution of said compound in said



sample, where expression of VEGF-D by said tumor is indicative of metastatic risk.

37. A method according to claim 36, wherein said compound is a monoclonal antibody which specifically binds VEGF-D.

38. A method according to claim 37, wherein said antibody binds to the VEGF homology domain of VEGF-D.

39. A method according to claim 36, wherein a said compound includes a detectable label.

40. A method of detecting micro-metastasis of a neoplastic disease state characterized by an increase in expression of VEGF-D comprising:

obtaining a tissue sample from a site spaced from a neoplastic growth in an organism in said neoplastic disease state;

exposing said sample to a composition comprising a compound that specifically binds VEGF-D;

washing said sample; and

screening for said metastasis of said neoplastic disease by detecting the presence, quantity or distribution of said compound in said tissue sample, where detection of VEGF-D

in said tissue sample is indicative of metastasis of said neoplastic disease.

41. A method according to claim 40, wherein said tissue sample is a lymph node from tissue surrounding said neoplastic growth.

42. A method according to claim 40, wherein said compound is a monoclonal antibody which specifically binds VEGF-D.

43. A method according to claim 42, wherein said antibody binds to the VEGF homology domain of VEGF-D.

44. A method according to claim 40, wherein a said compound includes a detectable label.